

CLAIMS

1. - Stacking machine of folded cardboard boxes or sheets, which being
 5 foreseen for the stacking and corresponding formation of packages of folded
 cardboard boxes or sheets coming from a line of transformation of cardboard
 sheets for the production of boxes, is characterized in that it incorporates a
 framework (1) in which are defined an infeed area (3) for the folded boxes
 (2), a first stacking area (4) and a second stacking area (5), the stacking
 10 being made of a first half package of boxes (20) in the first stacking area (4)
 and the stacking being made of a second half package (20') in the second
 stacking area (5), said half packages (20) and (20') being combined to form
 a single package (20") which is transported to the exterior of the machine,
 with the particularity that in the infeed area (3) a tilting table (6) has been
 15 foreseen which by means of straps and in accordance with its position
 transports the boxes (2) from said infeed area (3) to the first stacking area
 (4) wherein they are retained by a first stop (9), or via an upper conveyor belt
 (8) toward the second stacking area wherein they are retained by a second
 stop (9'), incorporating in the entrance to the stacking areas (4) and (5)
 20 corresponding vanes (10-10') which rotate by means of a servo-motor
 regulating the angular position thereof with respect to some axles (12-12') to
 facilitate the transfer of the folded boxes (2) and prevent their unfolding
 during their feeding into the first and second stacking area (4), and also the
 stacking areas (4) and (5) incorporate a first pressing means (18, 31) and a
 25 second pressing means (18', 31') respectively to facilitate the guided
 carriage of the first half package (20) and of the complete package (20")
 respectively.

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2. - Stacking machine of folded cardboard boxes or sheets according to claim 1 characterized in that the first stop (9) can tilt to be able to position itself vertically and retain the boxes which will form the first half package (20) in the first stacking area (4), and also the second stop (9') can also tilt and is of greater length than the first to retain the second half package (20') and the first half package (20) which arrives at the second stacking area (5), and also both stops (9-9') can occupy a folded position to allow the transport of the first half package (20) and of the complete package (20").

3. - Stacking machine of folded cardboard boxes or sheets according to claims 1 and 2 characterized in that in the first stacking area (4) is a first conveyor belt (7) on which the stacking is carried out of the first half package (20), which is capable of an ascending and descending motion to be positioned at the height of a second conveyor belt (22) located in the second stacking area (5), to which that first half package (20) has access, being located below a support lift (21) on which the second half package (20') is stacked.

4. - Stacking machine of folded cardboard boxes or sheets according to claims 1 and 3 characterized in that the tilting table (6) foreseen in the infeed area (3), is connected to a rocker arm by means of which said table (6) is tilted so that the latter occupies a lowered position which allows the transport of the boxes (2) from the infeed area (3) toward the first conveyor belt (7), or to occupy a raised position in correspondence with the upper conveyor belt (8) which transports the boxes (2) from the infeed area (3) toward the support lift (21) foreseen in the second stacking area (5).

5. - Stacking machine of folded cardboard boxes or sheets according to previous claims 3 and 4 characterized in that the support lift (21) has cylinders which after obtaining the second half package (20') act to allow this

second half package (20') to drop on the first half package (20) and obtain the complete package (20") which is carried toward the exit by the second conveyor belt (22).

5 6. - Stacking machine of folded cardboard boxes or sheets according to claim 1 characterized in that both the first pressing means (18) of the first stacking area (4), and the second pressing means (18') of the second
10 stacking area (5) can tilt and have individual axles (13-19) and (13'-19') between which corresponding straps run, being connected to the axles (13) and (13') corresponding intermediate vanes (11) and (11') capable of tilting with respect to these, which in combination with the infeed vanes (10) and (10') act on the boxes (2) which are entering the stacking areas (4) and (5) respectively impeding the unfolding thereof.

15 7. - Stacking machine of folded cardboard boxes or sheets according to claims 1, 2 and 6 characterized in that the first stop (9) and the second stop (9') are actuated through rollers foreseen in the back axle (19-19') of the pressing units (18-18') which determine the tilting of said stops (9-9') in
20 combination with the tilting and descent movements of the pressing units (18-18').

25 8. - Stacking machine of folded cardboard boxes or sheets according to claims 1, 6 and 7 characterized in that the axles (13-13') of the pressing means (18-18'), comprise an internal axle (14) and two end axles (15) external to the internal axle (14), this last item being equipped on its ends with respective gear wheels (17) which mesh with individual rack rails (16) for the vertical positioning thereof.

30 9. - Stacking machine of folded cardboard boxes or sheets according to previous claims characterized in that the drives of the axles (13-13') of the

pressing means (18) and (18'), as well as of the conveyor belts (7) and (22), of the carriage straps of the tilting table (6) and of the upper conveyor belt (8) are implemented by means of motors with frequency variator.

5 10. - Stacking machine of folded cardboard boxes or sheets according to claims 1 and 2 characterized in that in the first stacking area (4) it has been foreseen that the stacking machine incorporate a first table lift (32) on which the folded boxes (2) are stacked coming from the tilting table (6) which are retained by the first stop (9), said first table lift (32) descending progressively
10 as the boxes are stacked thereon until being introduced in a lower table (33) which extends over the length of this first stacking area (4) and of the second stacking area (5), said first table lift (32) and lower table (33) having a longitudinal slot for the passage of some transfer fingers (34), which push the first half package (20) formed on the lower table (33), when the first stop
15 (9) has been rotated upward, toward the second stacking area (5) in collaboration with the first pressing means (31) which maintains the first half package (20) pressed against the lower table (33) during its displacement.

20 11. - Stacking machine of folded cardboard boxes or sheets according to claims 1, 2 and 10 characterized in that in the second stacking area (5) a second table lift has been foreseen (30) on which the folded boxes (2) are stacked coming from the upper conveyor belt (8) and are retained by the second stop (9'), which table lift (30) descends progressively in height as the boxes (2) are stacked thereon until impinging on the first half package (20)
25 which is standing on the lower table (33) coming from the first stacking area (4), the table lift (30) incorporating a slot for the passage of the transfer fingers (34) which will traverse said slot at the same time as the slot of the lower table (33) pushing the first half package (20) and the second half package (20') to form the complete package which is transferred toward the
30 exterior with the help of the second pressing means (31').

12. - Stacking machine of folded cardboard boxes or sheets according to claims 10 and 11 characterized in that the transfer fingers (34) are mounted on a chain which follows a cyclic path around the lower table (33).

5 13. - Stacking machine of folded cardboard boxes or sheets according to claims 1, 10 and 11 characterized in that the first and second pressing means (31-31') consist of individual structures formed from sections supported by some articulated arms (34-34') operated by a pneumatic system which determine the movement of the structure in parallel with
10 respect to the lower table (22), it being foreseen that the lateral sections of the structure incorporate in their base some idler contact wheels which impinge on the first half package (20) or on the complete package (20") respectively.

15 14. - Stacking machine of folded cardboard boxes or sheets according to claim 11 characterized in that the lower table (33) is formed by support sections which have idler wheels on which the stacked boxes stand to facilitate the transfer thereof.